

- 15.—*Description of a New or Little Known Species of the Hemero-  
biidæ (Order Neuroptera) from South Africa, with Plates VII.-IX.*  
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## SUB-FAMILY MYRMELEONIDES.

GEN. PALPARES, Ramb.

PALPARES CATARACTÆ, n. sp.

Plate VII., fig. 3.

HEAD with the whole anterior face pale flavous, whole vertex dark drab or deep fuscous, antennæ wholly black; thorax very robust, width equal to three-fourths of the length, very dark fuscous, nearly black but with four sub-flavescent macules on the mesonotum, and the metanotum more distinctly variegated with yellow; the head is nearly glabrous, but the thorax is clothed with a black erect pubescence turning to flavescent white on the sides and metanotum; abdomen very long in the ♂, but shorter than the fore wings, even with the clasps included in the total length, and very little more than half the length in the female, flavescent on the centre of the upper side only, otherwise fuscous; genital clasps of the usual curved shape, and as long as the ultimate abdominal segment; legs very bristly and also pubescent, tibial spurs somewhat divaricating and slightly curving downwards; if straight they would reach as far as the third joint.

Wings hyaline with fuscous spots, macules, and bands; they are narrower in the male than in the female, with the posterior edge plainly sinuate, about two-thirds of the length, and the basal callus of the median costa is strongly developed and flavescent. In the anterior wings the costal area is regularly spotted with fuscous for more than half the length, maculated thence to the pterostigma which is very little distinct; the basal part of the area is irregularly maculated with fuscous, all the nervules are narrowly infuscate, and there are four much interrupted fuscous cross bands; a supra-basal broadly interrupted in the centre in the ♂, bi-interrupted in the ♀;

an ante-median one somewhat narrow, and almost indistinct towards the hind border in the ♂; the third one which is set past the middle is reduced to a broad, quadrate patch, and the ante-apical one is also interrupted, and very irregular; hind wings more evenly hyaline and the bands less interrupted, the basal and the ante-median ones do not invade the costal area which the other two do, the first is bi-incised on each side, the second also, but less deeply, and reaches the hind border, the third and broadest of all, encloses two hyaline areas, the fourth is apical, and is speckled at the very apex with a few hyaline dots; along the hind border is a series of black macules, some of which, mostly quadrate, merge into the cross bands.

Length of body ♂ append. excl. 62 mm.; ♀ 49 mm.; width: fore wings expanded 128–146 mm.; hind wings 122–134 mm.

Allied to *P. moestus*, Hagen, but in the latter both wings are much more deeply sinuate in the hind border, the basal cross band of the fore wing is much more indistinct, and in the hind wings the first supra-basal cross band is entirely absent.

*Hab.* Southern Rhodesia (Victoria Falls). II. Fry.

#### PALPARES MOSAMBICUS, n. sp.

♂. Head fuscous brown with the epistome and labrum yellow; antennæ somewhat long, entirely black; prothorax fuscous brown but with three lighter patches on the metanotum, clothed with greyish white pubescent hairs, denser on the meso- and meta-sternum; abdomen yellow on the upper side. Wings of nearly equal size, pale flavous; anterior ones moderately acuminate at apex, with the hind border slightly sinuate at about three-fourths of the length; the costal area is normally divided by simple nervures from the base to about the median part, but from there the nervules are forked in the anterior part; the whole costal space is tessellated with fuscous brown from the base to the pterostigma which is flavous and conspicuous, and there are on each wing four slanting, fuscous brown, diagonal bands; the first is supra-basal, and consists of agglomerated sub-quadrate patches somewhat tessellated and continued on the intervals of the 4–6th nervures as far as the base; the second band reaches from the median nervure to the hind border, and is deeply emarginate outwardly, the third reaches only the centre of the discoidal area and is not quite connected with the median nervule, the fourth begins at the pterostigma, is somewhat ill-defined, and is not distinctly continued beyond two-thirds of the width, the apical part is maculated with light fuscous, very small

patches, and the hind border is somewhat broadly tessellated with fuscous; hind wings a little shorter than the anterior, plainly narrowed in the basal part, ampliate at about one-fourth of the length, the discoidal area is hyaline flavescent for the same length, and each bears two broad slopingly longitudinal discoidal bands, the first of which is transversely broadly dilated along the hind border, the dilatation enclosing there two transparent patches, and connected by a narrow ramus with the second discoidal band which is of nearly equal width, but encloses along the hind border a small ovate patch, the third, somewhat triangular band has invaded the whole apical part, but encloses a crescent-shaped hyaline space, and two or three hyaline flavescent spots; the abdomen is one-fifth shorter than the hind wings, the clasps ( $\sigma$ ) are of the normal shape, and as long as the penultimate segment; the legs are very stiffly and densely bristly, the tibial spurs are as long as the two anterior joints taken together. The nervures are flavescent in both wings, and the fifth and sixth intercostal spaces are tessellated in the disk with light fuscous and white.

The colouration of the wings and the disposition of the bands and patches and spots closely resemble that of *P. elegantulus*, especially on the hind wings, but in the fore wings the apical band is not broadly divided longitudinally in the centre as in *P. elegantulus*, in which also the nervures of the costal area are not forked at apex except after the pterostigma.

Length of body, append. excl. 42 mm.; of fore wings, expanded 42 mm.; hind wings 40 mm.

*Hab.* Mozambique (Lourenço Marques). Howard.

#### PALPARES KARROOANUS, n. sp.

Plate VIII., fig. 6.

$\sigma$   $\varphi$ . Head pale fleshy and having on the vertex a broad fuscous band continued on the thorax; a similar lateral one on the pronotum; on the mesonotum there are on each side of the median fuscous band a narrower one, and outside of it an elongated spot; the head is briefly pubescent greyish in the frontal part, and very briefly setulose in the centre of the vertex; the edges of the strongly constricted pronotum are thickly fimbriate bristly, and the rest of the thorax above and below densely greyish hairy; antennæ completely black; palpi slightly infuscate at tip, spindle-shape, very acute at tip; abdomen sub-rufescent on the upper side, black beneath; appendages of the  $\sigma$  somewhat long, being nearly equal in length

to the penultimate segment, and thickening towards the apex; abdomen nearly glabrous except on the first and second basal segments; legs very bristly; spurs very long; wings very sharply acuminate at tip, somewhat narrow and with the hind borders not sinuate; anterior wing hyaline and having three slanting fuscous bands and an horizontal apical one, the basal part is very numerously spotted, and from the base to the first band there is an horizontal infusate bar, coalescing with the first band which in turn is broadly disconnected from a somewhat wide patch situate on the hind border, the second is strongly bi-sinuate, the third is first vertical, then very slanting, but all three bands are united in the centre of the disk by a longitudinal, not very even infuscation, the apical narrow discoidal band seems to be the prolongation of this infuscation; above it from where the perostigma, which is absent, should be, extends a long, lanceolate fuscous band nearly reaching the apex; costal nervure closely maculated from the base to the principal sectors, and slightly above the hind border runs an uninterrupted line of black macules, the border itself being regularly speckled.

Hind wings as sharply acuminate as the anterior; the greatest part of their area is fuscous black, but the costal and sub-costal areas are hyaline from the base to the principal sector but with regular slanting patches in the former, and a hyaline elongated one near the principal sector; the base is partly hyaline; there are 3, 2 and 3 superposed hyaline patches which are plainly what is left of the space that divided the fuscous area into three sub-vertical bands; towards the apex there is a very long stiliform patch somewhat dilated at the base, and the upper part of which is connected with the hyaline part on the principal sector; the extreme border is maculated with hyaline and fuscous spots from about the middle to the apex.

Width: fore wings expanded 108-118 mm.; hind wings 95-112 mm.; length of body append. excl. 38-48 mm.

*Hab.* Cape Colony (Fraserburg, Beaufort West).

Resembles somewhat *Crambomorphus* owing to the sharply pointed wings, but they are not sinuate as in that genus.

#### PALPARES ELEGANTULUS, n. sp.

Plate VII., fig. 4.

♂ ♀. Anterior part of head flavous, vertex somewhat pale flavous but almost completely covered by a broad light fuscous patch in both sexes; antennæ dark fuscous, the base with a small

flavescent patch; labial palps extremely long, apical joint gradually thickening towards the tip, but not at all tapering there in the manner of the majority of the species of *Palpares* known to me; prothorax sub-flavescent with the customary three fuscous black patches, more than twice longer than broad in both sexes; pronotum plainly bi-impressed transversely; abdomen, clasps included, as long as the fore wing in the ♂, shorter by one-third in the ♀, and plainly yellowish; the clasps in the ♂ nearly as long as the ultimate segment, moderately arcuate and of the usual type. Head glabrous; pronotum fringed in front and on the sides with rigid black hairs, the remainder of the thorax above and below clothed with a moderately thick, long greyish pubescence; abdomen briefly and sparingly setulose.

Wings hyaline, of similar shape in both sexes, and ornamented with fuscous brown patches, spots and bands; the nervules are pale flavescent. Fore wings: Costal area with a row of spots, set on each nervule, from a short distance from the base to the pterostigma which is short, flavescent, and is followed by a triangular patch, which does not reach the apical turn of the wing; the sub-costal area is very narrow, and without fuscous patches in the ♂; there are three fuscous brown bands, the ante-median, narrow in the male, broader in the female, is interrupted towards the hind part, the second reaches only to two-thirds of the width, the third, a nearly apical one, is broadly interrupted in the centre, the upper part coalescing with the post-pterostigmal patch, the lower reaching nearly the hind border; along the fourth longitudinal rib runs a series of semi-connected fuscous spots reaching from near the base to the first cross band, and the whole hind border and also the apical fore border is speckled with closely set fuscous brown dots.

Hind wings slightly shorter than the anterior, hyaline and having three cross fuscous brown bands extending across the whole width of the disk; the first is greatly dilated transversely in the centre, and there is beneath it along the border a small dot or patch with which it sometimes coalesces, being thus bifurcate on the hind part, the second one, equally broad, is united in the central part by a narrow ramus with the first, and somewhat incised near the hind border, the third is apical and plainly divided longitudinally in the centre in the ♂, but only incised in the ♀, and encloses at the very apex a hyaline but pluri-dotted space.

Legs flavescent, with some black spines and greyish hairs; tibial spurs nearly as long as the three basal joints, straight, very little inflexed.

Length of body append. excl. 34–39 mm.; width: fore wings expanded 64–94 mm.; hind wings 66–83 mm.

*Hab.* Cape Colony (Carnarvon), E. G. Alston; Matjesfontein (Beaufort West).

This species might at first sight be taken for *Palparidius capicola* owing to the colour and markings of the wings, but it is a true *Palpares*.

PALPARES GENIALIS, n. sp.

Plate VII., fig. 2.

♀. Head and thorax drab colour, only the anterior part of the head above the labrum narrowly transversely sub-flavescent, on each side of the metanotum is a somewhat small lighter patch; the whole thorax is moderately thickly greyish pubescent, the hairs fringing the border of the pronotum are, however, black and erect; abdomen yellow, slightly infuscate laterally on the two basal segments; antennæ black; legs black, strongly and numerous spinose, the tibial spurs are not quite as long as the three basal tarsal joints and not distinctly incurved.

Wings sub-obtusely rounded at tip, yet angular at the very apex; anterior ones a little wider than the posterior, and plainly longer; they are flavescent except for two wide discoidal areas, the cells of which, however, have a broad square yellow central patch; but all the infuscated cells, which form a tessellation impossible to describe accurately but which is well shown in the figure, have a pale yellow centre, and when, as in the apical part, the infuscation has invaded the whole cell, the cross nervules are pale flavescent. The costal area is conspicuously tessellated with fuscous; all the nervures and also the nervules are infuscate; at about one-fourth of the length is a cross yellow band reaching from the costal area to the hind border, broadly edged with a fuscous tessellation; a little further is a quadrate patch of the same colour reaching from the median to nearly the sub-median nervure; at about the middle is a third band or patch also flavous, and separated from the preceding one by a broad tessellated fuscous interval, and from an ante-apical uninterrupted, plainly yellow band which reaches from and includes the yellow pterostigma, to the hind border; the infuscate apical part is tessellated with yellow macules; along the hind border is a series of elongate, sub-vertical yellow patches extending from a third of the length to a short distance from the supra-apical, entire, yellow, cross band. Hind wings with the nervules of the costal area fuscous from the base to past the median part; they are hyaline with a flavescent

tinge much less conspicuous than in the anterior wings, and they have each three broad fuscous bands reaching right across; the first and second are similar in shape and broadly tri-furcate towards the hind border, the third band is apical and encloses an arcuate juxta-apical hyaline band and two or three hyaline spots along the fore border; the first fuscous band does not invade the costal area although abutting on it, but the other two reach from the fore- to the hind-border.

Length of body 42 mm.; width: fore wings expanded 92 mm., hind wings 92 mm.

*Hab.* Limpopo River. E. W. Eriksson.

PALPARES OVAMPOANUS, n. sp.

Plate VII., fig. 1.

♀. Head fuscous black with the labrum sub-flavescent; antennæ black; thorax fuscous black with a less obscure patch on each side of the metanotum, moderately densely villose, the erect pubescence on the pronotum fuscous, on the sides of the mesonotum and on the pronotum whitish and somewhat lanuginose; abdomen yellow, but fuscous below, and also on the upper side of the three terminal segments; legs black, numerously spinose, tarsal spines longer than the two basal joints.

Wings moderately obtusely rounded at apex but with the very apex somewhat acute, light fuscous but marked with flavescent sub-hyaline dots, patches, and bands. Anterior wing: costal spaces with a short series of flavescent macules, pterostigma transverse, yellow; at the base is a broad sub-quadrate yellow patch reaching from the sub-costal nervure to a short distance of the hind border, a narrow, cross, slanting band of the same colour, a wide hyaline discoidal area traversed at about the centre by a longitudinal yellow band, continued slantingly to near the hind border, and at about the sixth of the length a somewhat similarly narrow band of the same colour coalescing with the pterostigma and nearly reaching the hind border, at the very apex of the wing is a small yellow patch; all the cells are deeply infusate and the inner space flavous; along the hind border and at a short distance from the edge is a series of elongated, small, yellow macules. Hind wings a little narrower than the anterior, completely fuscous with the cells forming a light yellow tessellation; at the base is a large hyaline flavescent area extending from the base to one-third of the length; slightly past the middle is a sub-quadrate discoidal yellow patch broadly disconnected from a smaller one set close to the hind border, but which probably often

coalesces, forming a whole band; a narrow uninterrupted yellow band, reaching from the fore border to a very short distance of the hind one, a juxta-apical yellow macule; nearly below the median yellow patch and situate close to the hind border is a transverse macule and between the apical patch of the second band and the third one a minute yellow dot.

Length of body 40 mm.; width: fore wings expanded 92 mm., hind wings 85 mm.

*Hab.* Ovampoland, Omrramba. A. W. Eriksson.

#### PALPARES DUBIOSUS, n. sp.

This species is so closely allied to the well-known *P. speciosus*, L., that I hesitated to separate it as long as I had only female examples, but now that I have seen two male examples I have no longer any doubt that the two are different. A characteristic of *P. dubiosus* is the constant, smaller size. The colouring of the wings and body is the same, but the hind wings are more flavescens, and they have not along the posterior border of the hind wings the conspicuous black tessellation of *P. speciosus*; in the ♂ the clasps are much longer and more slender than in *P. speciosus*, being almost in the shape of a tuning-fork.

In the six examples that I have seen the sub-basal black median patch of the hind wings stands by itself as in the great majority of examples of *P. caffer*, Burm., from which, however, this species differs more than from *P. speciosus*.

It seems to replace the latter in the north-western part of the Cape Colony, although assimilating somewhat to examples from Namaqualand.

It is recorded from Touw's River (D. P. Lefebre), Clanwilliam (L. Leipold); Bushmanland (G. Alston), Kimberley (M. Wilman).

Length of body 38-59, of fore wings expanded 72-87 mm., of hind wings 70-80 mm.

#### PALPARIDIUS, n. gen.

Resembles *Palpares*, but separated from it by the absence on the posterior wings of the triangle-shaped furcation of the posterior cubitus, the *recurrens* or retrograding vein of Kolbe, and thus resembling the neuration of *Creagris*, and also by the very singular shape of the clasping organs of the male, the superior part of the appendages of which is produced into two very long cylindrical processes densely hairy especially in the inner part.



*PALPARIDIUS CAPICOLA*, n. sp.

Plate VII., fig. 5.

Head of a greyish colour slightly edged with flavescient, labrum, forehead, vertex, and legs flavous, antennæ entirely black, broadening considerably towards the apex; thorax ashy grey, with four or five sub-flavescient patches on the discoidal part; abdomen sub-flavescient with longitudinal broad fuscous black bands; wings hyaline with the patches fuscous, cross veins sub-flavescient or light brown, speckles distinctly brown. Fore wings each with three cross bands and a sub-basal spot, the first, sub-median, and the second, post-median bands are incised inwardly somewhat in the shape of a hook in the male, but in the female the first one is not distinctly hooked; the third one is more or less sharply triangular, somewhat in the shape of an arrow, and connected at the upper basal part with the pterostigma which is flavescient for a very short distance and fuscous afterwards; on the basal part of the disk are a few spots; the hind border has a continuous series of them, and the nervules of the costal space are speckled with brown at the base. Hind wings also with three cross bands corresponding to the position of those of the anterior wings, but broader and therefore better defined; the first one, also hooked, extends from the border to three-fourths of the width; the second extends over the whole width, is strongly zig-zagged, and even occasionally narrowly interrupted in the centre, the upper part abuts on the distinct, elongated, flavescient white pterostigma, the apical band encloses a narrow hyaline spot, the hind border is edged with continuous macules from half the length to the apical band. Head and thorax sparsely, abdomen densely but briefly bristly and hairy, the bristles black, the hairs whitish; legs bristly and spinose. The arcuate, dilated basal part of the clasping organs of the ♂ has inwardly two parallel hairy lobes, filling half the circumscribed space.

Length of body 29–31mm.; clasps of ♂ 11 mm.; fore wings expanded 70–81 mm.

*Hab.* Cape Colony, Carnarvon (Wyk's Vlei), G. Alston; Beaufort West (Hottentot River), A. R. Walker.

*PALPARIDIUS CONCINNUS*, n. sp.

♂. Head yellow with a triangular fuscous macule on the vertex; prothorax flavous with three longitudinal sub-interrupted fuscous bands; legs yellow, abdomen yellow, with two broad lateral fuscous bands on the upper side and a broader one underneath; clasps

flavescent; antennæ fuscous with the two basal joints and the pedicel flavescent.

This species would at first sight appear to be a varietal form of *P. capicola*, with the spots or bands on the wings less deeply infuscate and a little more irregular, but the genital clasps of the ♂ are very different in both species, although built on the same pattern. In the fore wing all the nervules of the intercostal space are transversely spotted at the base along the sub-costal nervule, the intervening parts of the latter being white, the pterostigma is white flavescent as in *P. capicola*; the sub-basal spot is wanting; the first band is patch-like and very narrow, the second band is also hooked inwardly, the apical one is as in *capicola*, but above it are numerous specks, and the hind border has two rows of minute specks from the first anterior third to the apex; in the hind wings the first transverse patch is very narrowed, somewhat ill-defined and not hooked; the second is divided into three broadly disconnected patches, the apical one is made of numerous specks with a sub-horizontal, more distinct patch, and towards the apex there are a few specks along the hind border. The clasping organ of the ♂ is only slightly diverging at the base and without any inner lobe there, instead of being sub-orbicular; it is much less bent downwards at the base, and is also proportionately longer. The female does not differ from the male, but the wings are longer.

Length of body 25 mm.; clasps 13 mm.; fore wings expanded 75–89 mm., hind 72–81 mm.

*Hab.* Transvaal (Potchefstroom), Harold Fry; Bechuanaland.

#### GEN. ACANTHACLISIS, Ramb.

##### ACANTHACLISIS MASHUNENSIS, n. sp.

Drab colour mixed with ashy grey, clothed on the head, thorax and legs with dense black and greyish-white hairs, with the grey ones predominating; antennæ with the joints fuscous and banded with white, the three basal joints flavous; epistome bright yellow, palpi also yellow but the ultimate joints are infuscate at apex, frons with a thick bunch of greyish hairs, the vertex infuscate; pronotum sub-flavescent, with a median truncated cone-shaped fuscous band, and a narrow one laterally; meso- and metanotum indistinctly banded; abdomen wanting; wings long, hyaline, with the apical lower margin slightly sinuate at apex, the costal area with one row of cells which is, however, duplicated at two-thirds of the length; space between the two median, parallel, nervures lacteous; at their

junction is a very small horizontal narrow fuscous patch, and a conspicuous one with a hyaline centre close to the bifurcation of the hind cubitus, and a smaller fuscous dot in the same position in the hinder wing, but as the bifurcation is there shorter the dot is nearer the base; all the nervures and nervules are whitish flavescens, interrupted by fuscous bands, and all bristling with fuscous and flavescens stiff hairs; the femora are rufescens, the tibiæ sub-flavescens, and the tibial spurs are turned inwards, and hooked almost at right angles at apex.

Length of body (?), of fore wings expanded 102 mm., of hind wings 87 mm.

This species is not unlike *A. dasymalla*, Gerst, but the neuration of the wings is more flavescens, the fuscous markings are quite different, and the shape of the spurs differs greatly.

*Hab.* Southern Rhodesia (Salisbury). G. A. K. Marshall.

ACANTHACLISIS LINEATIPENNIS, n. sp.

Plate VIII., fig. 8.

♂. Colouring and vestiture of *A. mashunensis* differs, especially by the colour pattern of the fore wings; all the nervures and nervules are flavescens, and interrupted by longitudinal black bars; they are long, plainly sinuate in the lower margin at apex, and they have no distinct trace of pterostigma; the sub-costal and marginal nervures are distinctly separated from the base to the position of the stigma, the costal area has a single row of cells, of which three or four become furcate near the apex of the sub-marginal costa, where it unites with the radial, and along the centre of the wing runs a narrow deep fuscous brown line, slightly sinuate at the end and reaching from the base to a short distance from the apex; legs brownish red; tarsal spurs long, the upper part bent at right angles, forming thus a very sharp hook.

Length of body 35 mm.; of fore wings expanded 96 mm., of hind wings 80 mm.

*Hab.* The habitat of the single specimen in the Museum Collection is not recorded, but I have seen another example from Bechuanaland.

GEN. MYRMELEON, Linn.

MYRMELEON BOSCHIMANUS, n. sp.

Plate IX., fig. 10.

Light drab with the thorax somewhat flesh-coloured and with numerous fuscous macules; antennæ concolorous, flesh-coloured;

wings transparent but with all the nervures and nervules of a drab colour, as well as with brown macules and patches. Head with a black central fuscous patch between the antennæ, and nine such patches on the vertex arranged in longitudinal series of three, which do not seem to coalesce in the three examples I have seen; pronotum with three distinct uninterrupted fuscous bands and a very small fuscous dot on each side, mesonotum with on each side three fuscous black bands ending past the middle, a broad central band and on each side of the hind part two superposed macules; metanotum with a somewhat narrow median band and a broader lateral one wider at the base than at apex; legs very narrowly ringed at apex of femora and tibiæ; tibial spurs absent. The fore wings bear, each past the first anterior third two oblique brownish bands, the first of which is reduced to small macules, whereas the second, which is almost median, is more distinct, and also a third, past median band much better defined but usually interrupted in the middle, and bounded by the white stigma, which is somewhat elongated; the whole of the apical area is numerously maculated; the hind wings have each two or three macules set slightly before the median part, and a past median broad band occasionally interrupted in the middle in the ♂, with the lower part prolonged horizontally along half the width of the posterior part and continued to the apex as small macules, while the upper part of that band is divided by a moderately broad sub-lacteous interval from a plain, sub-quadrate large patch reaching short of the apex. The nervules and nervures are briefly hairy and the margins very briefly fimbriate.

Length of body: ♂ 18½ mm., ♀ 15 mm.; fore wings expanded 19–24 mm., hind wings 16½–22 mm.

*Hab.* Cape Colony. Carnarvon District (E. G. Alston); Bushmanland (G. Alston); Damaraland (F. Hodson).

#### MYRMELEON OBTABILIS, n. sp.

Bright yellow; antennæ fuscous with the two basal and the four apical joints yellow; head with two conspicuously raised prominences on the vertex, on the space between the antennæ is a triangular black patch, and a small black dot on the declivous hind part of each of the knobs; pronotum with a black median band contracted in the centre, and a dot on each side; mesonotum with two short diverging basal macules in the centre, a large one on the scutellum and two or three small and irregular on each side; metanotum with five black macules; abdomen infusate, the dorsal segments flavescent for about half the length, apical segment and

clasps ( $\sigma$ ) totally flavescent; wings lacteous with the median part occupied by a pinkish-fleshy band occupying the median part of the area, and of the same shape as the wings themselves, which are acuminate at apex; the costal area of the fore wing is closely tessellate from near the base to the stigma, which is sub-flavescent, the rounded margin being dotted with a series of small spots; along the post-costal nervure is a series of sub-equidistant small macules reaching also from near the base to below the stigma, the hind lacteous part of the wings and also the apical are sprinkled with numerous small black dots; in the hind wings the costal area is spotless, except for a tiny spot at the furcation of the rami, the post-costal has three black macules, and the hind lacteous part a series of small macules, which do not reach the lower margin; all the nervures and nervules bear sharp, arcuate, erect, rigid bristles, and the margins are very briefly fimbriate; legs yellow with the coxæ, the knees, the apex of the tibiæ, and tarsal joints and the claws black.

Length of body ( $\sigma$ ) 19 mm.; fore wings expanded 48 mm.; hind wings 43 mm.

*Hab.* Cape Colony (Caledon), R. M. Lightfoot.

I know of no ally to which this pretty South African species could be compared.

#### GEN. CREAGRIS, Hag.

##### CREAGRIS INCLITUS, n. sp.:

Head and thorax yellow, but occasionally duller; the abdomen and legs are sub-rufescent and concolorous; wings hyaline with a narrow elongate pterostigma somewhat pale brown in the anterior, posterior ones much longer than the anterior and with a median longitudinal slightly fuscous brown, narrow band towards the apex. Antennæ light brown, very long in the  $\sigma$ , being one and three-quarters the length of the thorax, less elongated in the  $\text{♀}$ , but still very long, and with the apical joints slightly acuminate; labrum flavous, frons fuscous, vertex highly raised, fissured in the centre and with a faint, broad fuscous median band continued in the centre of the pronotum; the meso- and metasternums are more or less distinctly fusco-maculate; the abdomen is very long in the  $\sigma$ , much less so in the  $\text{♀}$ ; the wings are much longer than the body, hyaline, with the nervures and nervules flavous, the fore wings are narrow, sharply acuminate at apex with a slight sinuation there in the hind margin, the pterostigma is narrowly elongate and somewhat light brown; the hind wings are much narrower and much longer than

the fore wings, sharply acuminate, with the hind margin still more narrowed towards the apex for about one-fourth of the whole length, and they have each towards the apical part a short, quite median, light brown longitudinal streak reaching the tip, and in some examples extending to about one-fourth of the length; legs concolorous, tibial spurs reaching the base of the third joint of the tarsi.

The shape and markings of the wings approximate this species to *C. diana*, Kolb.

Length of body 37-48 mm.; of wings expanded: fore 79-95, hind 81-99 mm.

*Hab.* Natal, Maritzburg; Howick (J. Cregoe); Southern Rhodesia, Salisbury (G. A. K. Marshall).

#### CREAGRIS PROXIMUS, n. sp.

This species resembles *C. inclitus* in so many respects that I was for some time somewhat in doubt as to its identity. But having now obtained both sexes, I think it can be considered as a distinct species.

It is much smaller than *C. inclitus*; the wings, which are also hyaline with the nervures and nervules flavescent, have the same shape, but the hind ones are only very slightly longer than the anterior; the pterostigma is not indicated, and the longitudinal, slightly infusate streak at the apex of the hind wings is occasionally obliterated. The antennæ are much shorter, and in the two female examples in which they are entire, the ante-apical joints are more broadly spatulate than in *C. inclitus*; the epistome is flavescent, but the frons and vertex are fuscous black, the latter bears two transverse yellow macules; the prothorax is fuscous brown occasionally relieved by dull flavescent macules; the abdomen is deeply infusate; the legs rufo-flavescent with the tibial spurs reaching the base of the fifth tarsal joint.

Length of body 29-30 mm.; of wings expanded, 67-71 mm.

*Hab.* Natal (? Maritzburg); Transvaal (Rustenburg) Miss Schunke.

#### CREAGRIS PSEUDOPLUMBEUS, n. sp.

This species is also closely allied to *C. proximus*, the main difference being the presence of a distinct pterostigma in both wings and the total absence of a slightly infusate band in the posterior; but apart from that the fore wings are not so deeply sinuate towards the apex of the posterior margin, nor is that part as much elongate attenuate in the hind wings; the antennæ are sub-

flavescent, with the ultimate joints broadening to a spatuliform shape conspicuously hollowed; the epistome and legs are pale flavescent; the vertex is either maculated with fuscous, and somewhat flavescent, or fuscous maculated with yellow; the pronotum is usually lighter than the meso- and meta-notum, which are of a drab colour like the abdomen, which has, however, a lateral lighter band on each side, the nervures and nervules of the hyaline wings are flavescent, and the hind margins of both anterior and posterior are very briefly fimbriate.

From the description I concluded that this species was *C. lanceolatus*, Ramb., but in the British Museum Collection I found it identified as *C. africanus*, Ramb., which McLachlan considers to be scarcely different from *C. plumbeus*, Oliv., and places *C. pallidipennis*, Ramb., in synonymy with the latter. Now Rambur admits that his *C. pallidipennis* from Senegal is perhaps a variety only of *C. plumbeus*, but he mentions also an example from the Cape differing from his *C. africanus* by the narrower wings and three brown bands on the prothorax. It is the Cape species which I here describe.

Length of body 28–29 mm.; of wings expanded 58–69 mm.

*Hab.* Cape Colony (Worcester, Stellenbosch), L. Péringuey; (Prieska) F. W. Purcell; (Little Namaqualand) R. M. Lightfoot; (Burghersdorp) Dr. D. R. Kannemeyer; (Humansdorp) Rev. J. O'Neil; King William's Town (R. M. Lightfoot).

#### CREAGRIS BECHUANUS, n. sp.

♂. Pale flavescent; wings transparent but with a slight brownish sheen, all the nervures and nervules brown, and without macules or spots; pterostigma very small, very indistinct and somewhat brown; antennæ of nearly the same length as the thorax, brown, spatulate towards the apex, flattened there but hollow beneath; head pale flavescent with a transverse fuscous patch between the antennæ, and on the raised vertex a short median, elongated spot or narrow band along the median groove, and two small macules on each side; notum yellow, pronotum with three distinct entire fuscous bands; meso- and metanotum with the median fuscous band and an interrupted lateral band on the mesosternum and a patch on the metanotum; sternum flavescent, maculated with fuscous patches; abdomen very long, luteous; legs sub-rufescent, anterior tibiæ indistinctly annulated with fuscous; spurs of fore tibiæ slightly longer than the others but reaching only to about half the length of the basal tarsal joint, which is elongate.

This species is the only South African *Creagris* known to me with light fuscous wings.

Length of body 41 mm., of wings expanded 62 mm.

*Hab.* Bechuanaland (Mochudi).

CREAGRIS ANGUSTIPENNIS, n. sp.

♂. Epistome, pronotum, sternum, and legs pale flavescent, meso- and metasternum light fuscous variegated with greyish, abdomen extremely long, luteous; wings very narrow, lanciform, fore and hind of nearly equal length, hyaline but with a sublacteous iridescent sheen, pterostigma lacteous, slightly edged with brown, sub-costal and radial nervures, the latter especially, white and black, the white space, however, longer than the black, the other nervures and nervules partly white and fuscous, but those of the hind wings are concolorous, and the cells a little more iridescent than in the fore wings in my example; antennæ as long as the thorax, brown, joints narrowly edged with whitish; mesonotum vaguely tri-banded, meso- and meta-notum fuscous and greyish; femora speckled with fuscous dots; tarsal spurs very long, as long as the basal tarsal joint, which is longer than the three following taken together.

Length of body 43 mm.; of wings expanded 66 mm.

*Hab.* Cape Colony (King William's Town), R. M. Lightfoot.

CREAGRIS DAMARINUS, n. sp.

Flavescent; wings hyaline with the nervures and nervules pale flavescent, tessellated with fuscous, pterostigma flavous, somewhat distinct; hind wings with a lower marginal apical fuscous streak; legs pale flavescent, concolorous; abdomen fuscous with two lateral yellow bands. Head flavous with a narrow fuscous macule in the epistome, and four small ones on the vertex; the pronotum has a plain fuscous median band and a lateral one, the median is continued as far as the scutellum, and on each side of both the pro- and metasternum there is a somewhat broad band which on the prosternum is divided into three; the wings are narrow, almost equally acuminate, but not sinuate on the posterior margin; the hind wing is slightly narrower than the anterior and somewhat shorter; the sub-costal nervure is yellow, and concolorous, the other nervures and nervules are partly flavescent and partly fuscous, at equal intervals, the margins are distinctly although briefly bristly, and most of the nervures also; on the hind wing the posterior margin from the apex to about one-seventh of the length bears an elongated



narrow fuscous patch; the tarsal spurs are short, barely reaching the median part of the basal tarsal joint. Antennæ wanting.

Length of body 30 mm., of wings expanded 61 mm.

*Hab.* Damaraland (J. Hodson).

CREAGRIS MASHUNUS, n. sp.

Drab colour mixed with cinereous; wings hyaline with the nervures and nervules partly white and partly fuscous, pterostigma small, fuscous and lacteous, one small sub-vertical fuscous streak on the middle of the hind border of the fore wings, and a narrow, elongated but not very distinct one on the hind border of the posterior at a short distance from the apex; the tessellation of the nervures and nervules is more pronounced in the apical part especially of the fore wings and along the forked nervures of the hind margin; these wings are narrow, especially the hind ones, acuminate but hardly sinuate on the lower margin of the apex; epistome pale flavescent, vertex highly raised transversely, and with two parallel series of black macules transversely disposed; pronotum very plainly constricted laterally, fuscous, variegated with ashy grey and sub-rufescent macules somewhat indistinct; meso- and metasternums fuscous and variegated in the same manner; abdomen fuscous with a sub-rufescent patch in the middle of the dorsal part of each segment; legs rufescent, femora specked with fuscous; spurs nearly as long as the basal tarsal joint.

Length of body 22 mm., of wings expanded 52 mm.

*Hab.* Southern Rhodesia (Salisbury), G. A. K. Marshall.

FAMILY ASCALAPHIDES.

GEN. NEPHONEURA, McLachl.

NEPHONEURA MASHUNENSE, n. sp.

♀. Head rufo-brunnescent, epistome rufescent, whole head clothed with very long and very dense hairs which are partly black, and in the centre partly sub-flavescent; prothorax very densely hairy especially on the sides, pale brown, slightly variegated with ashy spots or patches, the mesosternal part black, the sides of the sternum bear a broad cretaceous longitudinal band on each side; abdomen light brown, each segment with two velvety vertical black patches on the dorsal part, and with two narrow bands, one apical, one basal, and also several small macules on the ventral; wings

hyaline with the nervures and nervules slightly rufescent brown, and having on the fore wings a narrow brownish band extending along the sub-costal and median nervures from the base to the pterostigma which is large and sub-arcuate; there is no tessellation proper in the costal area, only a few indistinct spots on the base of the nervure, from about the median part to the pterostigma; in the hind wings the rufescent brown band is as in the fore, but each nervule of the costal area has from one-third of the base a more distinctly infuscate patch close to the sub-marginal nervure, and the pterostigma is slightly broader than in the anterior wings; legs reddish-brown; antennæ flavous with the four apical joints and the broadly pyriform club fuscous brown.

This species is easily distinguished from *N. capensis* by the more hyaline wings, and also the markings of the abdomen; it resembles more *N. collusor*, but differs from it in the non-tessellated costal area, the absence of a supra-apical infuscate patch in the hind wings (♀); nor is the thorax variegated with yellow.

Length of body 22 mm., of fore wings 31 mm., of hind wings 23 mm.

*Hab.* Southern Rhodesia (Salisbury), G. A. K. Marshall.

#### ENCYOPSIDIUS, n. gen.

I propose this genus for a small, delicate species, of which I have seen one example only, and which in many characters resemble *Encyopsis*. The eyes are divided in the same manner, but are not in proportion quite as large; the shape and neuration of the wings are identical, and that of the clasps of the ♂ very similar, but the antennæ are much shorter, and the hind tibiæ have no apical spurs.

#### ENCYOPSIDIUS PROMONTORII, n. sp.

Plate IX., fig. 11.

♂. Head densely clothed with very long hairs greyish in front, fuscous at the apex; antennæ only two-thirds the length of the fore wings, flavescent, the club slightly fuscous; prothorax fuscous, clothed on the pronotum with fuscous and on the sides of the mesonotum with a fringe of white hairs, abdomen fuscous brown, clasps very short, flavescent; wings only moderately long, fore wings lacteous hyaline with the very base, the nervures, and the small pterostigma flavescent, the nervures slightly fuscous; hind wings plainly shorter than the anterior with the three anterior nervures, and the greatest part of the area flavescent, but the median part is

hyaline; sides of sternum maculated with flavescent; legs yellow, hind tibiæ without any spur.

Length of body 20 mm., of fore wings expanded 44 mm. of hind wings 35 mm.

*Hab.* Cape Colony (Cape District), L. Péringuey.

## SUB-FAMILY NEMOPTERIDES.

GEN. NEMOPTERA, Latr.

NEMOPTERA PURCELLI, n. sp.

Plate IX., fig. 13.

♂. Head, thorax, and abdomen bright drab colour, sides of thorax and legs pale yellow; antennæ moderately long, sub-infusate; head trituberculate on the vertex and with two small, not very distinct tubercles close to the base of antennæ; pronotum very strongly constricted with the anterior margin highly reflexed and fringed with upright fairly long bristles; mesonotum plurigibbose and bearing a few setose hairs laterally; abdomen short; anterior wings sub-obtuse at tip, hyaline with a slightly fuscous venation; the radial and sub-costal nervures and the space between them pale flavescent, the hind border and also the nervures are fimbriate; hind wings very long, very narrow, broadly dilated at apex in a very broad ovate paddle-like expansion half twisted in the centre, light fulvous like the stalk itself, which is lacteous, however, above the dilatation, and acuminate and distinctly lacteous at apex.

In the figure the white tapering lacteous part of the hind wing has not come out well; the right wing, however, shows the half twist of the paddle.

Length of body  $10\frac{1}{2}$  mm.; expansion of anterior wings 35 mm.; length of posterior wing, 29 mm.

This remarkable species was discovered some twenty-six years ago at Constantia, near Cape Town by my colleague, Dr. W. F. Purcell. It has not been met anew,

NEMOPTERA PULCHELLA.

Plate IX., fig. 14.

♀. Body and antennæ light fulvous, legs pale flavescent; vertex of head plainly trituberculate, thorax concolorous, pronotum constricted, and with the anterior margin and the sides densely setose;

sutures of the mesonotum very deep, the latter almost bigibbose; abdomen short; anterior wing long, slightly acuminate at apex, hyaline with a very slight pinkish tinge, the sub-costal costules greenish yellow for the whole of the length, no pterostigmatic macule, the reticulation nearly translucent; hind wings very long, pale greenish yellow, and ending at apex in a long, broad oar-like pinkish dilatation having a half twist.

In the figure this dilatation had to be shown flat.

Twice only did I meet with this pretty, delicate-looking insect, and I was not fortunate in the second occasion to capture the specimen.

Length of body 9 mm.; expansion of fore wings 42 mm.; length of hind wing 37 mm.

*Hab.* Cape Colony (Koeberg, Cape District), L. Péringuey.

#### NEMOPTERA DUMBRODIANA, n. sp.

♂. Flavescent, but with the upper part of the head, of the thorax, and the whole abdomen very light buff; basal joint of antennæ also buff—the other joints are missing; vertex of head with a conspicuous median tubercle; no traces of a neck; mesonotum constricted, short, sparsely setulose laterally, gibbositities of the mesonotum greatly developed; abdomen twice the length of the head and thorax taken together, the segments plainly pubescent; anterior wings moderately acuminate rounded towards the median part of the apex, hyaline but with the venation, especially the sub-radial nervures, which are set very closely to each other and become united slightly past the middle, somewhat flavescent; no pterostigma; the hind wings are very narrow, very long, and amplified at about two-thirds of their length into a narrow, oar-blade like process, making half a twist, very little acuminate at apex; for two-thirds of the length the hind wing is flavescent fuscous, turns thence to whitish for one-sixth of the length, the dilated reniform part is plainly fuscous for two-thirds of its length, but has an elongated lacteous patch along the upper edge, the third hind part is lacteous, but the very apex is lightly infuscate.

Length  $15\frac{1}{2}$  mm.; expansion of fore wings 48 mm.; length of hind wing 54 mm.

Not unlike in general appearance, and especially in the shape of the hind wings, *N. africana*, but the fore wings are more rounded in the anterior apical part and less distinctly acuminate on this account, the two sub-radial nervures become united slightly past the middle instead of at about four-fifths of the length as in the *N.*

*africana*, and lastly the colouration of the narrowly expanded reniform part of the hind wings is different.

*Hab.* Cape Colony (Uitenhage, Dunbrody), Rev. J. O'Neil.

GEN. CROCE, McLachl.

CROCE LIGHTFOOTI, n. sp.

Body very light drab; no yellow markings anywhere. Rostral part of head very long, antennæ wanting in my three examples, but from memory I can state that they are not long; pronotum longer than broad, attenuate in front but not constricted there and with only a few, very small setæ laterally; mesonotum distinctly plurigibbose; abdomen twice as long as the thorax ( $\text{♂}$   $\text{♂}$ ), concolorous; anterior wings hyaline and strongly iridescent, narrow at base, moderately acuminate at apex, plainly fimbriate all round, and with all the nervules distinctly hairy, and light drab in colour; pterostigma very long, partly white partly brown but not very conspicuous, costal space narrow, divided by not numerous nervules; hind wings very long, thread-like, slightly more than three times the length of the body, greatly diverging, slightly tapering towards the apex, clothed with a dense short pubescence, and having at about one-third of their length an elongated bunch of silky lanuginose white hairs, occasionally mixed with a few drab ones; the colour of these hind wings is light drab from the base to about the median part, and thence white.

The lanuginose bunch varies in size; it is never very large, but it is quite distinct. This character distinguishes it from *C. damara*, McLach., which I know, however, from description only, but in which the pubescence of the nervules of the wings is not mentioned.

Length of body  $9\frac{1}{4}$ – $9\frac{3}{4}$  mm.; expansion of wings 24–25 mm.; length of hind wing 35–41 mm.

*Hab.* Cape Colony (Clanwilliam), R. M. Lightfoot; (Namaqualand), G. Warren; (Damaraland), J. Christie.

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6. Palpares karrooanus.
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## PLATE IX.

9. Heliopteryx radiogramma ?, Ramb.
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